Amendments To The Claims

The following list of the claims replaces all prior versions and lists of the claims in this application.

1. (Original) A method of forming a final stacked gate dielectric, comprising the steps of:

providing a substrate;

forming an oxide layer upon the substrate;

forming a nitride layer upon the oxide layer; the oxide layer and the nitride layer comprising an initial stacked gate dielectric;

subjecting the initial stacked gate dielectric to a plasma nitridation process under an N-containing ambient to form an intermediate stacked gate dielectric; and

subjecting the intermediate stacked gate dielectric to a plasma reoxidation process to form the final stacked gate dielectric.

2. (Original) The method of claim1, wherein the oxide layer has a thickness of from about 3 to 15Å and the nitride layer has a thickness of from about 5 to 30Å.

3. (Original) The method of claim 1, wherein the oxide layer has a thickness of from about 5 to 10Å and the nitride layer has a thickness of from about 5 to 15Å.

4. (Original) The method of claim 1, wherein the oxide layer is thermal silicon oxide formed at a temperature of from about 600 to 700°C and the nitride layer is formed at a temperature of from about 500 to 700°C.

5. (Original) The method of claim 1, wherein the oxide layer is thermal silicon oxide formed at a temperature of from about 625 to 675°C and the nitride layer is formed at a temperature of from about 550 to 650°C.

6. (Original) The method of claim 1, wherein the oxide layer is thermal silicon oxynitride formed at a temperature of from about 700 to 900°C and the nitride layer is formed at a temperature of from about 500 to 700°C.

7. (Original) The method of claim 1, wherein the oxide layer is thermal silicon oxynitride formed at a temperature of from about 750 to 850°C and the nitride layer is formed at a temperature of from about 550 to 650°C.

8. (Original) The method of claim 1, wherein the oxide layer is thermal silicon oxide or thermal silicon oxynitride.

9. (Original) The method of claim 1, wherein the nitride layer is silicon nitride.

10. (Original) The method of claim 1, wherein the nitride layer is a CVD nitride layer.

11. (Original) The method of claim 1, wherein the nitride layer is formed by an RTCVD process or a RPECVD process.

12. (Original) The method of claim 1, wherein the plasma nitridation process is conducted at a temperature of from about 300 to 700°C.

13. (Original) The method of claim 1, wherein the plasma nitridation process is conducted at a temperature of from about 350 to 650°C.

14. (Original) The method of claim 1, wherein the plasma nitridation process is conducted under the following conditions:

temperature: from about 300 to 700°C; and

pressure: from about 10 mTorr to 10 Torr.

15. (Original) The method of claim 1, wherein the plasma nitridation process is conducted under the following conditions:

temperature: from about 350 to 650°C; and

pressure: from about 20 mTorr to 5 Torr.

16. (Original) The method of claim 1, wherein the plasma reoxidation process is conducted at a temperature of from about 300 to 700°C.

17. (Original) The method of claim 1, wherein the plasma reoxidation process is conducted at a temperature of from about 350 to 650°C.

18. (Original) The method of claim 1, wherein the plasma reoxidation process is conducted under the following conditions:

temperature: from about 300 to 700°C; and

pressure: from about 10 mTorr to 10 Torr.

19. (Original) The method of claim 1, wherein the plasma reoxidation process is conducted under the following conditions:

temperature: from about 350 to 650°C; and

pressure: from about 20 mTorr to 5 Torr.

20. (Original) The method of claim 1, wherein the plasma reoxidation process 18 is conducted in the presence of a material selected from the group consisting of O_2, N_2O and NO.

21. (Original) The method of claim 1, wherein the plasma reoxidation process is conducted in the presence of O_2.

22. (Original) The method of claim 1, wherein the substrate is a silicon substrate.

23. (Original) A method of forming a final stacked gate dielectric, comprising the steps of:

providing a silicon substrate;

forming a thermal oxide layer upon the silicon substrate;

forming a nitride layer upon the thermal oxide layer; the thermal oxide layer and the nitride layer comprising an initial stacked gate dielectric;

subjecting the initial stacked gate dielectric to a plasma nitridation process under an N-containing ambient to form an intermediate stacked gate dielectric; and

subjecting the intermediate stacked gate dielectric to a plasma reoxidation process to form the final stacked gate dielectric.

24. (Original) The method of claim 23, wherein the thermal oxide layer has a thickness of from about 3 to 15Å and the nitride layer has a thickness of from about 5 to 30Å.

25. (Original) The method of claim 23, wherein the thermal oxide layer has a thickness of from about 5 to 10Å and the nitride layer has a thickness of from about 5 to 15Å.

26. (Original) The method of claim 23, wherein the thermal oxide layer is comprised of thermal silicon oxide formed using a temperature of from about 600 to 700°C and the nitride layer is formed using a temperature of from about 500 to 700°C.

27. (Original) The method of claim 23, wherein the thermal oxide layer is comprised of thermal silicon oxide formed using a temperature of from about 625 to 675°C and the nitride layer is formed using a temperature of form about 550 to 650°C.

28. (Original) The method of claim 23, wherein the thermal oxide layer is comprised at thermal silicon oxynitride formed using a temperature of from about 700 to 900°C and the nitride layer is formed using a temperature of from about 500 to 700°C.

29. (Original) The method of claim 23, wherein the thermal oxide layer is comprised of thermal silicon oxynitride formed using a temperature of from about 750 to 850°C and the nitride layer is formed using a temperature of from about 550 to 650°C.

30. (Original) The method of claim 23, wherein the thermal oxide layer is comprised of thermal silicon oxide or thermal silicon oxynitride.

31. (Original) The method of claim 23, wherein the nitride layer is comprised of silicon nitride.

32. (Original) The method of claim 23, wherein the nitride layer is CVD nitride layer.

33. (Original) The method of claim 23, wherein the nitride layer is formed using an RTCVD process or a RPECVD process.

34. (Original) The method of claim 23, wherein the plasma nitridation process is conducted at a temperature of from about 300 to 700°C.

35. (Original) The method of claim 23, wherein the plasma nitridation process is conducted at a temperature of from about 350 to 650°C.

36. (Original) The method of claim 23, wherein the plasma nitridation process is conducted under the following conditions:

temperature: from about 300 to 700°C; and

pressure: from about 10 mTorr to 10 Torr.

37. (Original) The method of claim 23, wherein the plasma nitridation process is conducted under the following conditions:

temperature: from about 350 to 650°C; and

pressure: from about 20 mTorr to 5 Torr.

38. (Original) The method of claim 23, wherein the plasma reoxidation process is conducted at a temperature of from about 300 to 700°C.

39. (Original) The method of claim 23, wherein the plasma reoxidation process is conducted at a temperature of from about 350 to 650°C.

40. (Original) The method of claim 23, wherein the plasma reoxidation process is conducted under the following conditions:

temperature: from about 300 to 700°C; and

pressure: from about 10 mTorr or 10 Torr.

41. (Original) The method of claim 23, wherein the plasma reoxidation process is conducted under the following conditions:

temperature: from about 350 to 650°C; and

pressure: from about 20 mTorr or 5 Torr.

42. (Original) The method of claim 23, wherein the plasma reoxidation process 18 is conducted in the presence of a material selected from the group consisting of O_2, N_2O and NO.

43. (Original) The method of claim 23, wherein the plasma reoxidation process is conducted in the presence of O_2.